

AMENDMENTS

In the Claims

Please amend the claims as indicated below. A complete set of all claims previously submitted, including the status for each claim, immediately follows below.

1. Cancelled
2. Cancelled
3. Cancelled
4. Cancelled
5. Cancelled
6. Cancelled
7. Cancelled
8. Cancelled
9. Cancelled
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32. Cancelled

33. Cancelled

34. Cancelled.

35. Cancelled.

36. Cancelled.

37. Cancelled.

38. Withdrawn.

39. Cancelled.

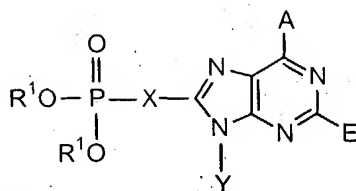
40. Cancelled.

41. Withdrawn.

42. Cancelled.

43. Cancelled.

44. (New) A method of preventing diabetes in an animal, comprising administering to said animal a therapeutically effective amount of a fructose-1,6-bisphosphatase inhibitor wherein said inhibitor is a compound of formula 1:



wherein

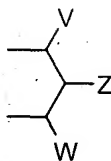
A is selected from the group consisting of $-\text{NR}^8$, $-\text{NHSO}_2 \text{R}^3$, $-\text{OR}^5$, $-\text{SR}^5$, halo, lower alkyl, $-\text{CON}(\text{R}^3)_2$, guanidino, amidino, $-\text{H}$, and perhaloalkyl;

E is selected from the group consisting of $-\text{H}$, halo, lower alkylthio, lower perhaloalkyl, lower alkyl, lower alkenyl, lower alkynyl, lower alkoxy, $-\text{CN}$, and $-\text{NR}^7_2$;

X is selected from the group consisting of $-\text{alk-NR}-$, alkylene, alkenylene, alkynylene, arylene, heteroarylene, $-\text{alk-NR-alk}-$, $-\text{alk-O-alk}-$, $-\text{alk-S-alk}-$, $-\text{alk-S}-$, alicyclicene, heteroalicyclicene, 1,1-dihaloalkylene, $-\text{C}(\text{O})-\text{alk}-$, $-\text{NR}-\text{C}(\text{O})-\text{NR}'-$, $-\text{alk-NR}-\text{C}(\text{O})-$, $-\text{alk-C}(\text{O})-\text{NR}-$, $-\text{Ar-alk}-$, and $-\text{alk-Ar}-$, all optionally substituted, wherein each R and R' is independently selected from $-\text{H}$ and lower alkyl, and wherein each "alk" and "Ar" is an independently selected alkylene or arylene, respectively;

Y is selected from the group consisting of $-\text{H}$, alkyl, alkenyl, alkynyl, aryl, alicyclic, heteroalicyclic, aralkyl, aryloxyalkyl, alkoxyalkyl, $-\text{C}(\text{O})\text{R}^3$, $-\text{S}(\text{O})_2 \text{R}^3$, $-\text{C}(\text{O})-\text{OR}^3$, $-\text{CONHR}^3$, $-\text{NR}^2_2$, and $-\text{OR}^3$, all except H are optionally substituted;

R^1 is independently selected from the group consisting of $-\text{H}$, alkyl, aryl, heteroalicyclic where the cyclic moiety contains a carbonate or thiocarbonate, $-\text{C}(\text{R}^2)_2$ -aryl, $-\text{alk-aryl}-$, $-\text{C}(\text{R}^2)_2 \text{OC}(\text{O})\text{NR}^2_2$, $-\text{NR}^2-\text{C}(\text{O})-\text{R}^3$, $-\text{C}(\text{R}^2)_2-\text{OC}(\text{O})\text{R}^3$, $-\text{C}(\text{R}^2)_2-\text{O}-\text{C}(\text{O})\text{OR}^3$, $-\text{C}(\text{R}^2)_2 \text{OC}(\text{O})\text{SR}^3$, $-\text{alk-S-C}(\text{O})\text{R}^3$, $-\text{alk-S-S-alkylhydroxy}$, and $-\text{alk-S-S-S-alkylhydroxy}$, or together R^1 and R^1 are $-\text{alk-S-S-alk}-$ to form a cyclic group, wherein each "alk" is an independently selected alkylene, or together R^1 and R^1 are



wherein

V and W are independently selected from the group consisting of hydrogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, 1-alkenyl, 1-alkynyl, and $-R^9$; or

together V and Z are connected via a chain of 3-5 atoms, only one of which can be a heteroatom, to form part of a cyclic group substituted with hydroxy, acyloxy, alkoxy, alkoxy, alkoxy, alkoxy, or aryloxy, attached to a carbon atom that is three atoms from an oxygen attached to the phosphorus; or

together V and W are connected via a chain of 3 carbon atoms to form part of a cyclic group substituted with hydroxy, acyloxy, alkoxy, alkoxy, alkoxy, alkoxy, or aryloxy, attached to a carbon atom that is three atoms from an oxygen attached to the phosphorus;

Z is selected from the group consisting of $-\text{CH}_2\text{OH}$, $-\text{CH}_2\text{OCOR}^3$, $-\text{CH}_2\text{OC(O)SR}^3$, $-\text{CH}_2\text{OCO}_2\text{R}^3$, $-\text{SR}^3$, $-\text{S(O)R}^3$, $-\text{CH}_2\text{N}_3$, $-\text{CH}_2\text{NR}^2_2$, $-\text{CH}_2\text{Ar}$, $-\text{CH(Ar)OH}$, $-\text{CH(=CH=CR}^2\text{R}^2\text{)OH}$, $-\text{CH(C}\equiv\text{CR}^2\text{)OH}$, and $-\text{R}^2$;

with the provisos that:

- a) V, Z, W are not all $-\text{H}$; and
- b) when Z is $-\text{R}^2$, then at least one of V and W is not $-\text{H}$ or $-\text{R}^9$;

R^2 is selected from the group consisting of R^3 and $-\text{H}$;

R^3 is selected from the group consisting of alkyl, aryl, alicyclic, heteroalicyclic, and aralkyl;

R^4 is independently selected from the group consisting of $-\text{H}$, lower alkyl, lower alicyclic, lower heteroalicyclic, lower aralkyl, and lower aryl;

R^5 is selected from the group consisting of lower alkyl, lower aryl, lower aralkyl, lower alicyclic, and lower heteroalicyclic;

R^6 is independently selected from the group consisting of $-\text{H}$, and lower alkyl;